

I claim:

1. A method of subsurface waste water treatment, wherein waste water is flowed into a conduit and then into an influence zone in the soil, in which zone the biochemistry of the waste water is altered to become more environmentally benign, which comprises: delivering heat to the influence zone, to significantly heat the soil therewith.
2. The method of claim 1 wherein the heat is delivered to the influence zone by flowing heated fluid through the conduit and then into the influence zone.
3. The method of claim 2 wherein the heated fluid is air.
4. The method of claim 3 wherein the temperature of the air is less than 120°F.
5. The method of claim 3 wherein air is drawn from a source which provides air with a found heat content; further comprising: flowing air into the conduit whenever the temperature in soil in or adjacent to the influence zone is less than the temperature of the found heat content air.
6. The method of claim 1 wherein the temperature of the influence zone is raised by at least 5°F over the temperature which obtains in the absence of heating.
7. The method of claim 1 wherein the heating is sufficient to maintain the influence zone at a temperature in the range 50-100°F.
8. The method of claim 1 wherein heat is provided to the influence zone by imbedding at least one heating element within the soil which is within or adjacent to the influence zone.

9. The method of claim 1 wherein heat is provided to the influence zone by means of a heating element within the conduit.
10. The method of claim 8 wherein the heating element is in the portion of the influence zone which underlies the conduit.
11. The method of claim 8 wherein the heating element comprises a tube, further comprising: flowing a heated fluid through the heating element.
12. The method of claim 1 wherein heat is provided to the influence zone by flow of heated fluid from a perforated tube buried within the soil which is within or adjacent to the influence zone.
13. The method of claim 1 which further comprises: sensing the temperature in the influence zone, comparing said temperature to a reference temperature, and controlling the extent of delivering of heat according to the difference between the two temperatures.
14. The method of claim 1 which further comprises: inhibiting vertically upward heat loss by insulating the soil above the conduit.
15. The method of claim 14 wherein a layer of material is applied to the surface of soil directly above the conduits and influence zone.
16. The method of claim 1 wherein a geothermal source of heat underlies the soil containing the conduit, which further comprises: transferring heat from the geothermal heat source to the influence zone.

17. The method of renovating or restoring the function of a leach field which comprises:  
delivering heat to the influence zone, to significantly heat the soil therewith.

18. The method of claim 17 which comprises temporarily ceasing the flow of waste water to the leach field, then heating the influence zone, then flowing air through the influence zone, and then resuming the flow of waste water to the leach field.

19. Apparatus for treating waste water within soil which comprises:

a conduit for conveying waste water within the soil, and for percolating waste water into an influence zone in the soil;

an influence zone in soil adjacent the conduit, for biochemically altering waste water to make the waste water more environmentally benign; and,

means for heating the influence zone, to raise the temperature thereof and to increase biochemical activity therewithin.

20. The apparatus of claim 19 wherein the means for heating comprises heating elements buried in the soil.

21. The apparatus of claim 20 wherein the heating elements are tubes through which hot fluid circulates; further comprising: means for raising the temperature of hot fluid, to be circulated through the heating elements.

22. The apparatus of claim 19 wherein the heating elements are within the soil of the influence zone.

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23. The apparatus of claim 19 wherein said means for heating comprises means for flowing heated air into the influence zone.

24. The apparatus of claim 23 which further comprises: means for flowing heated air through the conduit and then into the influence zone.

25. The apparatus of claim 24 wherein the means for flowing heated air comprises:

an air mover for pressurizing atmospheric air; and,

means for heating the atmospheric air.

26. The apparatus of claim 25 wherein the air mover draws atmospheric air from within a building having an associated heat generating system; and, wherein said means for heating the atmospheric air comprises said associated heat generating system.

27. The apparatus of claim 25 wherein the air mover is a blower and the means for heating the atmospheric air is purposeful inefficiency in operation of the blower.

28. The apparatus of claim 19 wherein said means for heating comprises means for transferring heat from a source of heat which is spaced apart from the leach field.

29. The apparatus of claim 28 wherein the source of heat is water within the earth underlying the soil.

30. The apparatus of claim 29 wherein the means for transferring comprises a heat pump.

31. The apparatus of claim 19 further comprising means for inhibiting vertical transfer of heat through soil above the conduit.

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